



COMDTINST 16575.1
AUG 24 1999

COMMANDANT INSTRUCTION 16575.1

Subj: PROCESSING OF GLOBAL POSITIONING SYSTEM (GPS) INTERFERENCE TEST
REQUESTS

Ref: (a) Presidential Decision Directive NSTC-6, 28 March 1996, U.S. Global Positioning System
Policy
(b) Memorandum of Agreement Between the Department of Defense (DOD) and the
Department of Transportation (DOT), 8 Jan 1993, Civil Use of the Global Positioning
System

1. PURPOSE. This Instruction supplements references (a) and (b). It provides specific guidance, responsibilities and authority necessary to efficiently process DOD-sponsored GPS interference test requests within the Coast Guard.
2. ACTION. Area and district commanders and Commanding Officer of Coast Guard Navigation Center (NAVCEN) shall ensure compliance with the provisions of this Instruction.
3. DIRECTIVES AFFECTED. None.
4. DISCUSSION.
 - a. On a periodic basis DOD and selected other agencies, e.g., National Aeronautics and Space Administration (NASA), conduct testing or other activities which may infringe on the GPS frequency band. During the planning stages of these tests and activities, DOD has committed to requesting approval of the testing from DOT in an attempt to reduce impacts on civil GPS users.

- b. Particularly important to the Coast Guard is the potential impact on "safety of life" in the harbor entrance and approach phase of maritime navigation. The Coast Guard installed and operates the Maritime Differential GPS (DGPS) Service to meet this safety requirement. The DOT's designated point of contact for GPS-band test approval is the Federal Aviation Administration (FAA). An Information Dissemination Coordination Team (IDCT), comprised of representatives from all agencies involved in the approval process, implements the DOD/DOT relationship that is formalized in Annex 3 to reference (b). The GPS Interference Test Approval (GITA) process was developed to facilitate test approval within the framework of Annex 3.
- c. The Coast Guard will receive notification of proposed testing from the FAA, and will analyze the impact on the maritime community. The FAA and the Federal Railroad Administration (FRA) will determine the impact on the aviation community and land transportation interests respectively, and will perform their own impact analysis.

5. GENERAL POLICY.

- a. It should be understood that testing affecting GPS is necessary for national security interests. The goal is to create an environment of cooperation among various DOD and DOT agencies involved in GPS interference testing, such that a balance is achieved between the requirements of civil transportation safety and national security interests. Reasonable efforts should be made to avoid denial of necessary testing, while at the same time avoid placing mariners using DGPS in a hazardous environment created by such testing.
- b. Ideally, testing would be conducted in such a manner that the mariner would not be affected. In most cases, however, a compromise may be achievable and should be sought so that the goals of the interference testing can be met, and the effect on navigable waterways kept to a minimum. Every effort will be made to negotiate with the testing agency or frequency management authority to develop a test scenario that is acceptable to both DOD and the Coast Guard. Where interference to GPS/DGPS over a waterway cannot be eliminated, a Notice to Mariners will be issued as appropriate to advise mariners.
- c. In the few instances in which a negotiated agreement on test parameters cannot be reached, and NAVCEN recommends disapproval based upon perceived threats to maritime safety, the matter will be referred to Commandant (G-OP) for final determination.

6. ORGANIZATION. This instruction is concerned primarily with Coast Guard and FAA coordination. It will be updated to include coordination with FRA as Nationwide Differential GPS (NDGPS) reaches Full Operational Capability and land transportation interests become more fully developed.

7. RESPONSIBILITIES/AUTHORITY. Primary responsibility within the Coast Guard for processing GPS interference test requests lies with NAVCEN. NAVCEN will establish

working relationships with Coast Guard districts, the DOD Frequency Management Agency, and various other entities deemed necessary to assess GPS test impacts and negotiate acceptable GPS test parameters.

- a. NAVCEN will develop specific standard operating procedures based upon general guidelines in this Instruction. NAVCEN will receive notification of proposed testing from the FAA and will analyze the impact on the maritime community as part of the aforementioned IDCT process. Expected turnaround time for reply to FAA for proposed testing will be five working days for those tests that will not affect navigable waters. NAVCEN shall approve these requests.
 - b. Each District shall designate a point of contact for maritime safety and other GPS interference testing impact review. Should NAVCEN determine the potential exists for testing to impinge on U.S. navigable waters, they will request a review by that District of maritime safety impacts based upon knowledge of local conditions, types of maritime traffic, hazardous cargoes being transported, local events, local pilot dependency upon GPS/DGPS, planned events or operations, and other impacts of the tests. Districts shall respond to NAVCEN within 5 days. If the District determines the impact is acceptable, NAVCEN shall approve the request and issue appropriate Notice to Mariners.
 - c. NAVCEN shall ensure that the District's point of contact is made aware of the "Cease Buzzer" procedures in the event that the testing needs to be halted for reasons detailed later in this Instruction.
 - d. If NAVCEN's preliminary review or the Districts' impact results in a recommendation that the testing should not be approved, NAVCEN shall refer the case to Commandant (G-OP) for final determination. Specific examples that will require Commandant (G-OP) review include testing that will impact a Maritime DGPS broadcast site or that will impact a major port or waterway, such as New York Harbor, San Francisco Bay, or others.
8. ASSESSMENT CONCERNS. There are two primary areas of concern to consider when making an assessment of the impact of proposed GPS interference testing on the maritime community. The first concern involves interference testing that directly affects a DGPS broadcast site. When a DGPS broadcast site is affected, the effects of the testing extend far beyond the originally intended test area, perhaps as much as 200 nautical miles. The second area of concern involves interference testing affecting navigable waters. Of primary interest are critical waterways such as harbor entrance approaches, restricted waterways in which there exists high-density traffic involving hazardous cargoes or passenger traffic, or hazardous inlets where vessels are known to rely on GPS/DGPS to effect a safe passage. There may be other concerns involving either planned or emergency situations or critical operations that may be heavily dependent upon availability of GPS/DGPS signals.

9. PROCEDURES.

- a. NAVCEN is responsible for analyzing the information to determine the impact of interference/testing on the U.S. Coast Guard's DGPS broadcast sites, navigable waterways and maritime users. After careful analysis and district input, NAVCEN will either approve the testing or refer the request to Commandant (G-OP).
- b. NAVCEN will transmit approval responses to the FAA. The FAA will produce an "Electronic Countermeasure (ECM) Authorization" message before the requested test date. Commandant (G-OP) will prepare and forward any disapproval to NAVCEN for further dissemination to the FAA.
- c. "Cease Buzzer" is a procedure whereby authorized officials can quickly halt a specific test because the test is creating problems that were not anticipated or expected during the test planning phase. NAVCEN will be responsible for having at the ready all "Cease Buzzer" information on the days of testing. For each test the "Cease Buzzer" information will be found within the body of the FAA ECM Authorization message. District points of contact should be aware of this procedure and notify NAVCEN's watchstander at (703) 313-5900 for any of the reasons indicated below to stop the testing. NAVCEN is authorized to call the "Cease Buzzer" point of contact to stop the testing if:
 - (1) There is reason to believe the testing is adversely impacting search and rescue efforts, etc.; or
 - (2) There are events/traffic that will be adversely impacted by the loss of GPS/DGPS in the maritime area, e.g., Liquefied Natural Gas (LNG) Carrier in final approach to designated harbor; or
 - (3) There is reason to believe the testing is affecting areas not expected to be affected, e.g., DGPS sites.

10. SUMMARY. Conformance with policy outlined in this Instruction should be sufficient to manage GPS interference requests under normal circumstances. Negotiating mutually acceptable interference test scenarios at the lowest possible organizational level is of prime importance. Every effort must be made to avoid denial of necessary GPS interference testing, while at the same time avoiding the creation of a hazardous transportation

environment. Our goal is to establish a sufficient level of cooperation with DOD test agencies such that a balance between the requirements of civilian transportation users and national security interests can be achieved.

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